

Product data sheet, January 2020

Makrolon® UV Patterned polycarbonate sheet



Your benefits:

- excellent weathering resistance
- extreme impact strength
- resistance to a wide range of temperatures

Makrolon® UV patterned sheets are clear transparent poly-carbonate sheets with UV protection on both sides, and a patterned surface. They offer extreme impact strength that exceeds the physical properties of other products of their class. **Makrolon** sheets resist temperatures of -100 to +120 °C.

Makrolon® UV clear 2099 RH is a clear transparent sheet with high light transmission, a raindrop pattern on one side, and a haircell pattern on the other side.

Makrolon® UV clear 2099 P, sheet has a pearl pattern on one side, and is smooth on the other side.

Makrolon® UV clear 2099 GX, sheet has a haircell pattern on one side, and a prism pattern on the other side.

Applications:

Typical applications for **Makrolon® UV** patterned sheets include lighting fixtures, luminair covers, balcony guards, wall and door partitions. The sheets offer protection against involuntary breakage and wilfull destruction. The patterned surfaces offer a solution wherever sight screens are required to let in light.

	Test Conditions	Typical values ⁽¹⁾	Unit	Standard
PHYSICAL Density Water absorption saturation Water absorption equilibrium Refractive index	water at 23 °C 23 °C, 50% relative humidity Procedure A	1200 0.30 0.12 1.587	kg/m³ % ~	ISO 1183-1 ISO 62 ISO 62 ISO 489
MECHANICAL Tensile modulus Yield stress Yield strain Nominal strain at break Flexural modulus Flexural strength Charpy impact strength Charpy impact strength Izod impact strength	1 mm/min 50 mm/min 50 mm/min 2 mm/min 2 mm/min 23 °C, unnotched 23 °C, 3 mm, notched 23 °C, 3.2 mm, notched	2350 >60 6 >50 2350 90 non-break 80P 90P	MPa MPa % MPa MPa kJ/m² kJ/m²	ISO 527-1,-2 ISO 527-1,-2 ISO 527-1,-2 ISO 527-1,-2 ISO 178 ISO 178 ISO 179-1eU ISO 179-1eU ISO 179-1eA ISO 180-A
THERMAL Vicat softening temperature Thermal conductivity Coefficient of linear thermal expansion Temperature of deflection under load Temperature of deflection under load	50 N, 50°C/h 23°C 23 to 55°C 1.80 Mpa 0.45 Mpa	148 0.20 0.65 128 140	°C W/(m.K) 10⁻⁴/K °C °C	ISO 306 ISO 8302 ISO 11359-1, -2 ISO 75-1, -2 ISO 75-1, -2
ELECTRICAL Electrical strength Volume resistivity Surface resistivity Relative permitivity Relative permitivity Dissipation factor Dissipation factor	1 mm 100 Hz 1 MHz 100 Hz 1 MHz	34 1E14 1E16 3.1 3.0 5 10 ⁻⁴	kV/mm Ohm.m Ohm - - -	IEC 60243-1 IEC 60093 IEC 60093 IEC 60250 IEC 60250 IEC 60250 IEC 60250 IEC 60250

⁽¹⁾ These values are measured on injection molded samples, and are not intended for specification purposes.

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Exolon Group S-Line, the standard product line, represents a range of certified quality products which offer the reliable solution for most applications.

Light Transmission: Test Method according to DIN EN ISO 13468-2

The stated thicknesses are not all available as standard. Please ask us for more information.

The stated values are typical values only.

Light transmission in % at 3 mm thickness	Makrolon [®] UV RH	Makrolon [®] UV P	Makrolon® UV GX
clear 2099	86	86	86
green 2650	67		
blue 2550	53		
bronze 2850	44		

Available sizes: Makrolon[®] UV patterned sheets are available in thicknesses 3 – 6 mm and in following sizes; other sizes, colors and sheet thicknesses on request.

Colors:

Makrolon® UV clear 2099 P Makrolon® UV clear 2099 GX Makrolon® UV clear 2099 RH Makrolon[®] UV green 2650 R Makrolon[®] UV blue 2550 RH Makrolon[®] UV bronze 2850 RH

Patterns:

Makrolon® UV clear 2099 RH





Makrolon® UV clear 2099 GX



Sizes (Standard):

3,050 x 2,050 mm (RH) 3,050 x 1,650 mm (P, GX)

Weathering Resistance: Makrolon[®] UV sheets show excellent weathering resistance, which guarantees their impact strength even after many years. Since their introduction in 1989, the sheets have been examined in an intensive test programm, including a real-time outdoor exposure test in a southern European climate (Bandol).

Permanent Service Temperature: The permanent service temperature without load is approx. 120 °C.

Glow wire flammability index, IEC 60695-2-12, in °C (*): Makrolon® UV clear 2099 RH: 960 °C at 3 mm



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